



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,294	09/23/2004	Robert Schill	EIF0004US	3727
23413 7590 01/07/2010 CANTOR COLBURN, LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER GWARTNEY, ELIZABETH A				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
01/07/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary

Application No.

10/509,294

Applicant(s)

SCHILL ET AL.

Examiner

Elizabeth Gwartney

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 21 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/7/2009 has been entered.
2. Claim 23 has been added. Claims 1-10, 21 and 23 are pending.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 23 recites the limitation "wherein said pulp contains a residual fraction of lipids and sarcoplasmic proteins comprised between 0.15% and 3% of the weight of the pulp." While there is support in the specification and claims as originally filed for a residual fraction of lipids and sarcoplasmic proteins comprised between 0.1% and 3%, there is no support for a residual fraction comprised between 0.15% and 3%.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-9, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hultin et al. (US 6,005,073) in view of Rogols (US 5,436,024).

Regarding claim 1, Hultin et al. disclose a process for the manufacture of intermediate food products in a form of hydrated concentrates of myofibrillar proteins from fish flesh (Abstract, C7/L44-49), said process comprising the following steps:

- an initial pulp of minced fish flesh is prepared from fish fillets (*see* deheaded and gutted fish fillets -C8/L54, *see* mince -Figure 4, C9/L2-4);
- said initial pulp is washed with water (C9/L5-9, Figure 4);
- said washed pulp is refined in the wet state by removing a fraction of impurities (*see* centrifuge removing oil, membrane, bone and skin - Figure 4;
- the pulp is drained to produce a densified pulp (*see* centrifuge/filter- Figure 4);
- cryoprotectants are added to the densified pulp to form a final pulp suitable for freezing (*see* cryoprotectants – Figure 4);
- and said final pulp is frozen (*see* freeze – Figure 4).

Given Hultin et al. disclose that the pulp is washed in 1 to 9 or more volumes of water (based on the weight of ground muscle source), since water is known to have a pH of 7, intrinsically the pulp would be maintained at a substantially neutral pH.

Hultin et al. also disclose that the washed pulp contains a residual fraction of lipids comprising between 0.12% and 0.14% of the weight of the pulp (C15/Table 2).

Hultin et al. do not disclose that the refined pulp is mixed until it is in a form of a homogenous emulsion, that the final pulp is packaged in a form of blocks.

Regarding packaging in a form of blocks, Rogols teaches that it is well known in the art to form surimi (i.e. processed fish mince) into blocks prior to freezing (C1/L35-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have

formed the processed fish mince of Hultin et al. into blocks prior to freezing because this procedure is commonly used for surimi processing and use of a known process step in a known environment to accomplish entirely expected results.

Regarding mixing the refined pulp to form a homogenous emulsion, while Hultin et al. disclose a process to manufacture intermediate food products in a form of hydrated concentrates of myofibrillar proteins (i.e. surimi) wherein fish pulp is homogenized with wash water (Figure 4) to form an emulsion, the reference does not explicitly disclose homogenizing refined pulp. Given homogenization of fish pulp containing protein and lipid forms an emulsion, since refined fish pulp contains both protein and lipid, it would be inherent that refined fish pulp forms a stable emulsion. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have homogenized the refined fish pulp of Hultin et al. rather than the unrefined fish pulp.

Regarding claim 2, modified Hultin et al. disclose all of the claim limitations as set forth above and that the pulping operation is coupled with addition of water (see wash water – Figures 1 and 4).

Regarding claim 3, modified Hultin et al. disclose all of the claim limitations as set forth above and that about 1 to 9 or more volumes of water is added to the pulp (C9/L5-7).

Regarding claims 4 and 21, modified Hultin et al. disclose all of the claim limitations as set forth above. Given that Hultin disclose the removal of membrane, bone and skin from the minced and washed fish by centrifugation, it is clear that the pulping operation is a function of a density gradient in the fish fillets.

Regarding claim 5, modified Hultin et al. disclose all of the claim limitations as set forth above. Further, Hultin et al. disclose that the washing operation is composed of the following steps:

- water is added to the initial pulp and the whole is mixed to form a water-pulp mixture (C9/L5-7);
- the water-pulp mixture is centrifuged and the resulting water is removed (C9/L10-12);
- and the centrifuged pulp is washed continuously with water (Figure 2, C9/L8-9).

Regarding claim 6, modified Hultin et al. disclose all of the claim limitations as set forth above, however, the reference does not disclose that in the centrifugation step, a volume of water removed is between 80 and 95% of a volume of water initially used. As the recovery of sarcoplasmic proteins is a variable that can be modified, among others, by adjusting the volume of water removed in the centrifugation step, the precise volume removed would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed volume of water removed cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the volume of water removed in the centrifugation step in the surimi process of Hultin et al. to obtain the desired recovery of sarcoplasmic proteins (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Regarding claim 7, modified Hultin et al. disclose all of the claim limitations as set forth above. While Hultin et al. disclose mixing is carried out until a homogenized pulp is in a form of an emulsion, the reference fails to disclose that the emulsion has a stability of more than 10 minutes. As oxidative stability is a variable that can be modified, among others, by adjusting the stability of the fish pulp emulsion, the emulsion stability would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed emulsion cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the stability of the fish pulp emulsion of Hultin et al. to obtain the desired level of oxidative stability (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Regarding claims 8-9, modified Hultin et al. disclose all of the claim limitations as set forth above and that the mixing step is followed by a deodorization of the emulsified pulp in which the latter is evacuated (*see* micronize under vacuum removing low molecular weight compounds responsible for off or rancid odors - C12/L42-45) and where the operation for draining the emulsified pulp is carried out by centrifugal decantation (Figure 4).

Regarding claim 23, modified Hultin et al. disclose all of the claim limitations as set forth above. While Hultin et al. that the washed pulp contains a residual fraction of lipids comprising between 0.12% and 0.14% of the weight of the pulp (C15/Table 2), the reference does not

explicitly disclose a residual fraction comprising between 0.15% and 3% of the weight of the pulp.

It is apparent, however, that the instantly claimed residual fraction and that taught by Hultin et al. are so close to each other that the fact pattern is similar to the one in *In re Woodruff*, 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a “slight” difference in the ranges the court held that such a difference did not “render the claims patentable” or, alternatively, that “a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties”.

In light of the case law cited above and given that there is only a “slight” difference between the amount of residual fraction disclosed by Hultin et al. and the amount disclosed in the present claims and further given the fact that no criticality is disclosed in the present invention with respect to the amount of residual fraction, it therefore would have been obvious to one of ordinary skill in the art that the amount of residual fraction disclosed in the present claims is but an obvious variant of the amounts disclosed in Hultin et al. and thereby one of ordinary skill in the art would have arrived at the claimed invention.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hultin et al. (US 6,005,073) in view of Rogols (US 5,436,024) as applied to claim 1 above, and further in view of Shah et al. (WO 01/62888).

Regarding claim 10, modified Hultin et al. disclose all of the claim limitations as set forth above. While Hultin et al. disclose the addition of cryoprotectants, the reference does not explicitly disclose that the final pulp is subjected to a cold extrusion operation during the addition of cryoprotectants. Shah et al. teaches that it is well known in surimi processing to add cryoprotectants and extrude the final pulp prior to freezing (p.3/L3-5). Further, it is well known in the art that high temperatures will damage protein functionality. Therefore, it would have been obvious at the time the invention was made to have subjected the final pulp of Hultin et al. to a cold extrusion operation while adding cryoprotectants because doing so would amount to nothing more than use of a known surimi freezing process of its intended use in a known environment to accomplish entirely expected results. Further, doing so would protect the functionality of the refined protein.

Response to Arguments

8. Applicant's arguments filed 12/07/2009 have been fully considered but they are not persuasive.

Applicants explain that claim 1 has been amended to recite "adjusting pH of said water to maintain said pulp at substantially neutral pH." Applicants find that "[n]either Hultin or Rogols, taken alone or in combination, teach adjusting the pH of water to maintain the pulp at a substantially neutral pH."

Here, Hultin et al. teach that the pulp is washed with water (C9/L5-9, Figure 4). Further, given Hultin et al. disclose that the pulp is washed in 1 to 9 or more volumes of water (based on

the weight of ground muscle source), since water is known to have a pH of 7, intrinsically the pulp would be maintained at a substantially neutral pH.

Thus, Hultin et al. disclose a step wherein the pulp is washed in water and maintained at a neutral pH. There is nothing in the claims to limit subsequent steps wherein the pH is adjusted to a pH below 3.5.

Applicants submit that claim 1 recites "washing said initial pulp to obtain a washed pulp containing a residual fraction of lipids and sarcoplasmic proteins comprised between 0.1 and 3% of the weight of the pulp. Applicants argue, given Hultin teaches said impurities degrade and render the product unacceptable, Hultin "very clearly teaches away from maintaining a residual fraction of lipids in such a food product."

While Hultin et al. disclose impurities, including membrane lipids, "render the product unacceptable", Hultin et al. clearly discloses a finished product with an amount of lipid, i.e. with 0.12-0.14% (C15/Table 2), that overlaps with the amount presently claimed. Therefore, given Hultin et al. disclose a fish protein product comprising some lipid, i.e. 0.12-0.14% (C15/Table 2), in a range overlapping with that presently claimed, it can not be said that Hultin et al. teaches away from "maintaining a residual fraction of lipids in such a food product."

Further, applicants allege unexpected results based on evidence present in specification ([0151]-[0152] of published application). Applicants submit that the "[a]pplicant's disclosure teaches that maintenance of lipids and sarcoplasmic protein in the finished product considerably raises a yield of the overall process. [T]hus a raising of the lipid content of the product by merely 1% allows for a 12% raise in yield." Applicants argue that this improvement is

unexpected. In fact, applicants argue, any positive result achieved by the presence of lipid would be considered unexpected relative to the "unacceptable" teaching of Hultin.

Given Hultin et al. disclose a fish protein product comprising some lipid, i.e. 0.12-0.14% (C15/Table 2), identical to the quantity presently claimed, it is clear that the product would intrinsically display the same yield increases relative to a product without lipid.

In the alternative, the question as to whether unexpected advantage has been demonstrated is a factual question. *In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984). Thus, it is incumbent upon applicant to supply the factual basis to rebut the prima facie case of obviousness established by examiner. See, e.g., *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). Applicants, however, have not shown that comparison samples in said disclosure fairly represent the closest prior art. In this case, Hultin et al. discloses typical protein recovery two times that demonstrated by applicant, i.e. 42% (C15/Table 1). Therefore, it is unclear if protein recovery, i.e. yield, is a result of lipid content or some other processing condition.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Gwartney whose telephone number is (571) 270-3874. The examiner can normally be reached on Monday - Friday; 7:30AM - 3:30PM EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. G./

Examiner, Art Unit 1794

/KEITH HENDRICKS/

Supervisory Patent Examiner, Art Unit 1794